

EJGS Work Plan - Friends of Van Cortlandt Park's Wetland Stewardship for a Healthier Bronx

I. Project Title and Project Purpose Statement

The Friends of Van Cortlandt Park (FVCP) are requesting \$30,000 from the EPA's Environmental Justice Small Grants Program to conduct a "Wetland Stewardship for a Healthier Bronx" (Wetland Stewardship) project from September 2015 to August 2016. During the course of this project, FVCP will work with school groups and community members to identify sources of water quality impairments, complete wetland restoration projects, and create a wetland plan by mapping potential sites for green infrastructure to restore the 56 acre Tibbetts Wetlands within Van Cortlandt Park in the northwest Bronx (near zip codes 10463 and 10471 zip codes) of New York.

As public sector funding continues to decline, programs that educate young people and encourage youth advocacy and volunteerism are increasingly critical to preserving and protecting not only the Park and its resources, but the environment as a whole. Today's young people can make a tremendous impact, if their natural inquisitiveness and eagerness to contribute to their communities are adequately channeled in a positive direction. This project will immerse youth in practical projects that respond to locally identified priorities: wetland restoration and watershed maintenance. The goals for the "Wetland Stewardship for a Healthier Bronx" project are to:

- Develop a baseline for the current status of the wetlands in Van Cortlandt Park
- Implement an ongoing wetland restoration curriculum with local schools
- Implement a monthly Wetland Restoration Crew
- Study the impacts of various wetland restoration techniques on the health of the wetlands

The Wetland Stewardship project will address the Clean Water Act, Section 104(b)(3) as we will conduct investigations, demonstration projects and studies relating to the causes, effects, extent, prevention, reduction and elimination of water pollution entering the Tibbetts Wetland and the city's sewer system. In addition, this project will focus on the community's climate resiliency by reducing sewer overflows into local rivers by increasing vegetation including trees as well as the holding capacity of the wetland, thereby reducing the amount of water that flows from Van Cortlandt Lake and Tibbetts Brook into the sewer during heavy storm water events. Water quality in wetlands is highly influenced by land uses, vegetative cover, and natural features such as slope and soil types occurring within the watershed.

II. Environmental, Public Health and Community Climate Resiliency information about the affected community

Tibbetts Wetland is a major link in the natural drainage pattern of the Park, which encompasses a watershed of slightly under 850 acres. For the purpose of this proposal, "Tibbetts Wetland" shall include the wetland area along Tibbetts Brook, the brook itself and Van Cortlandt Lake which encompasses a total of 56 acres. This entire area has been classified as a Class I Freshwater Wetland by the NYS Department of Environmental Conservation. Throughout the Bronx, there are three freshwater wetland areas (two of which are in the Park) that total 98 acres making Tibbetts Wetland the largest in the Bronx.

Tibbetts Brook is a historic trout stream that begins its flow north of the Bronx in White Plains and flows south into the Van Cortlandt Park Lake before emptying into the city's combined sewer system. Jacobus Van Cortlandt created what is now known as Van Cortlandt Lake during the late 1690s by building a dam across Tibbetts Brook to power a gristmill for their agricultural industry. During the American Revolution (1775–1783), Van Cortlandt's mills ground grain and cut lumber for both the Americans and the British, depending on who controlled the region. By the late 19th century, technology bypassed the mill industry and the Lake became habitat for local fauna. In 1961, excess pollution north of Van Cortlandt leaked into the brook killing thousands of fish in the lake. Subsequent efforts to revitalize the stream included a complete restocking of the lake's fish population in 1978. In 2002, the NYC Department of Parks and Recreation completed a Van Cortlandt Lake Restoration project which included dredging the lake (changing the depth from an average of three feet to 9 -15 feet), installing sediment tanks to help capture runoff from the Major Deegan Interstate Highway I-87 and installing a stone edge along the lake to help reduce erosion. Today, the Van Cortlandt Park Master Plan includes a plan for day lighting Tibbetts Brook south of Van Cortlandt Lake and channeling it once again along the unused Putnam Rail Trail leading into the Harlem River waterfront creating a green corridor for wildlife and people.

Development along the waterway has created sources of highly concentrated runoff contaminated with salt, oil, and roadside debris, and has caused erosion into the wetlands. Non point source pollutant sites will be indicators for our investigation and those locations will be potential sites for green infrastructure. Possible sources of anthropogenic pollutants within the Park include:

- Four highways (I-87, Henry Hudson Parkway, Saw Mill River Parkway, and Moshulu Parkway) all cut through the park and are within close proximity to the wetlands area
- Van Cortlandt Golf Course surrounds a major section of the wetlands and most likely uses fertilizers and herbicides to maintain the greens;
- A large pipe discharges street drainage and drainage from a salt pile and gas dock, both located in the Northwest Corner of the park, into the wetland; and,
- The Putnam Rail Trail which runs along the wetlands from the southern edge of Van Cortlandt Park and continues north into Westchester County (where it is currently paved) is currently a dirt surface, but is slated to be paved within Van Cortlandt Park.

This project will achieve the following local environmental and climate resiliency results:

- Restoration projects will increase the amount of water being absorbed by the wetlands therefore reducing the amount entering the sewers, and,
- Sources of potential pollution of the wetlands will be determined and methods will be tested to try to reduce the amount of pollution entering from these sources, including suggesting sites for green infrastructure, and
- Restoration projects will remove non-native invasive plants and replace them with native plants that are healthier for the entire ecosystem.

On average 1.45 million gallons of water per day flows from Van Cortlandt Lake into the overflow weir and through a sewer along Broadway which flows to the Wards Island Sewage Treatment Plant whose effluent goes into the East River. During storms, rainwater floods the

system and causes sewage overflow into the Harlem River at a combined sewer overflow (CSO) outlet with one of the highest discharge volumes in NYC, thus polluting the river. During extreme storms such as Superstorm Sandy, the water can back up in the sewers along the streets of the Bronx polluting these areas as well. The wetlands in Van Cortlandt Park are directly connected to the Broadway sewer system which goes from Van Cortlandt Park to the Harlem River. Increasing the holding capacity of Tibbetts Wetland could drastically decrease the influx of rainwater into this system, thereby reducing the outflow from the sewer into the Harlem River. Therefore, this project could improve the living conditions of a much larger portion of Bronxites than only those within the 10471 and 10463 zip codes near the wetlands.

The Bronx is considered one of the most diverse areas in the country. According to the 2010 Census, 10.9% of the population was non-Hispanic White, 30.1% non-Hispanic Black or African American, 3.4% non-Hispanic Asian, 0.6% from some other race (non-Hispanic) and 1.2% of two or more races (non-Hispanic). 53.5% of Bronx's population was of Hispanic, Latino, or Spanish origin (they may be of any race). In 2012, the median household income was \$32,460 with \$56,448 being the median for entire state of New York. In July of 2013, the unemployment rate was 11.9% within the Bronx while the NY State rate was at 7.6%. These statistics are from www.city-data.com. A recent study by the University of Wisconsin and the Robert Wood Johnson Foundation found that the Bronx is the least healthy county in all of New York State. During the course of this project, our restoration efforts will help to reduce potential health and environmental hazards by reducing the number of CSO events within the Harlem and East River Watersheds. This will also improve the climate resiliency of this area allowing the sewers to handle severe rainfall events.

III. Organization's Historical Connection to the Affected Community

The Friends of Van Cortlandt Park, an independent community based organization, actively promotes the conservation and improvement of Van Cortlandt Park through environmental education and restoration and enhancement of the Park, its forests and trails. FVCP was founded in 1992 by Bronx resident Felicity Nitz in response to a *New York Times* article describing the impacts of declining NYC Department of Parks and Recreation (NYC Parks) budgets on parks like Van Cortlandt that lacked wealthy benefactors or an organized network of local support. She brought together neighbors and friends, and from a small beginning, for over twenty years FVCP has grown to play an increasing role in maintenance and community programming for Van Cortlandt Park. Each year, FVCP generates thousands of hours of volunteer support for park maintenance, trains thousands of young people in environmental stewardship, and offers community programs to promote fitness and environmental action.

All three of FVCP's full-time and permanent staff members will play a role in this project. Christina Taylor, Executive Director, has worked with the organization for over 14 years starting as the Outreach Coordinator and then becoming the Executive Director in 2006. In addition, Ms. Taylor is a board member of the Bronx Council for Environmental Quality, Co-Chair of the Bronx Coalition for Parks and Green Spaces and a member of the Community Board 8's Parks and Recreation Committee. Sara Kempton, Director of Programs, was born and raised in the Bronx and has been with the organization for 8 years. John Butler, Trails Project Manager, has

been with the organization for less than a year but has quickly become an advocate for Bronx environmental issues.

During fiscal year 2014, the Friends actively engaged the largest number of participants in our history with 6,136 children and adults participating in our programs. FVCP has a successful track record of working with interns and volunteers from throughout New York City to complete restoration projects in the Park. Last year, we worked with over 1,000 volunteers to complete forest, trail and garden restoration project along with over 1,700 students participating in environmental education programs. We will continue our current relationships with local groups including schools and build new ones to ensure the success of this project.

Currently, NYC Parks' policy is that no one can conduct hands-on work within Van Cortlandt Park without direct supervision from NYC Parks or Friends of Van Cortlandt Park's employees. Since there are currently only three NYC Parks staff dedicated to maintenance of the natural areas of Van Cortlandt Park, the Friends of Van Cortlandt Park have played a vital role in allowing community members to affect positive change in the park through environmental restoration projects. Over our 22 years, we have easily worked with over 20,000 volunteers to complete forest, wetland and trail restoration projects. The Friends of Van Cortlandt Park are leading the charge in the Northwest Bronx to allow community members to actively participate in environmental restoration projects.

The Friends of Van Cortlandt Park maintains an ongoing relationship with the community by attending and speaking at local Community Board meetings, offering free hikes, volunteer events and other programs for the community, maintaining social media sites such as Facebook (over 2,300 likes) and Twitter (over 550 followers) and sending out a monthly newsletter to over 1,700 email addresses.

The Friends of Van Cortlandt Park will provide updates to the public about the Wetland Stewardship for a Healthier Bronx projects on our website, social media sites and at local Community Board meetings. Residents will be able to reach out to our staff with any questions and concerns via email or phone. The vast majority of projects will be completed with the support of volunteers from the community who will be actively involved in the decision-making process.

IV. Project Description

i) Activities the Project Will Undertake During the Year to Examine and Address the Environmental and Public Health Issue(s)

On a local ecological level, the Wetland Stewardship for a Healthier Bronx project will reduce the amount of water that flows from Van Cortlandt Lake and Tibbetts Brook into the sewer, thus reducing sewer overflow into the rivers during heavy storm water events. A combination of classroom study, hands-on participatory group work, and outdoor service projects will stimulate eager students to become involved in planting, invasive removal, and other activities that will benefit Tibbetts Wetland and therefore the Harlem River and East River watersheds.

The Friends of Van Cortlandt Park will develop and implement a “Wetland Stewardship for a Healthier Bronx: with school groups during the 2015-2016 school year. The curriculum will utilize young people’s natural curiosity and interest in investigation and the scientific method by allowing students to look around the area, note their observations, check indicator areas and compare invasive and non-native plants. We will focus our outreach efforts on 4th to 12th grade classes in Bronx public schools but will allow others into the program as well. Currently, we have commitments from the entire 4th grade class of the Grand Concourse Academy and several classes at Dewitt Clinton High School to participate in this new program. In addition, FVCP will offer activities for the general public to engage them in this project. From September of 2015 to August 2016, the Friends of Van Cortlandt Park will actively engage at least 400 students and 100 community members in wetland restoration and education efforts.

The program’s framework will adopt the investigative approach to science supporting actions like observing, predicting, assembling data, experimenting and evaluating. The scientific method has four steps: (1) observation and description of a phenomenon, (2) formulation of a hypothesis to explain the phenomena, (3) use of the hypothesis to predict the existence of other phenomena, or to predict the results of new observations, and (4) experiments to test the predictions. Tests will be open investigations rather than conducted as a set of closed instructions. Students will be involved in planning and initial ideas, and our staff will help turn the topic into a problem statement that identifies the independent and dependent variable -- each of which could be measured. Questions will be developed such as: How does the amount of water (independent variable) affect the height (dependent variable) of plants? How does the amount of light a plant is exposed to (independent variable) affect the uptake of water (dependent variable)? The next step would be to develop the hypothesis which should connect the two variables, as well as identify other things that may impact the outcome. The testing will be conducted with regard to assumptions and proper use and accuracy of equipment used (such as mapping, photographing, monitoring, counting, etc.). Findings will be marked on a map at the site of the discovery, and/or graphed so conclusions may be proposed, analyzed and evaluated.

The Friends of Van Cortlandt Park’s staff with the assistance of our partners (information below) will develop two modules to use as part of the “Wetland Stewardship for a Healthier Bronx” project. The first module will be focused on high school groups and will involve more in-depth involvement in the project. The High School Module will start with a tour of Tibbetts Wetlands and a discussion on the importance of wetlands in general and the current state of those in Van Cortlandt Park. This will be followed by FVCP visiting classrooms during the winter to discuss and develop a plan of action that the students can take to improve the wetlands. Then during the spring, students will visit the park several times to complete the projects that they developed. Potential projects include: invasive plant removal and native plantings in wetlands and surrounding forest areas, water testing to determine sources of pollution, removal of invasive plants and the laying down of tarp to prevent aggressive invasive plants from coming back, and cleaning up storm drains. Although students will play a key role in developing projects, FVCP staff will be involved throughout the process and will have final approval of all projects to ensure they address and improve the key goals of the project. Our goal is to work with at least six high school classes who will commit to participating at least 5 times during the school year.

The second module will focus on younger students and include a tour of the wetlands followed by a work day or two in the park to complete a minor restoration project. When possible, we will have the younger students assist the high school students in completing one of their projects. This will allow the older students to have an opportunity to be project leaders and explain the larger role they are playing in the project. Our goal is to work with at least ten fourth through eighth grade classes who will participate at least 2 times during the school year.

In addition to working with school groups, FVCP will also offer activities for the general public. In the fall of 2015, FVCP will begin to implement a monthly Wetland Restoration Crew which will meet once a month from September to December and then again from April to June. This crew will adopt a few sections of wetland and implement different methods of restoration to help us determine which methods work the best in our park. This crew will be modeled after our successful Trails Restoration Crew. The Friends of Van Cortlandt Park will also offer Wetland Tours, once in the fall and once in the spring, to educate the general public about the wetlands and the work that we are doing while hopefully recruiting additional volunteers.

These proposed projects compliment water quality and preservation projects on the Harlem and East Rivers. The proposed activities will reduce invasive species, increase native species and restore the shoreline of Van Cortlandt Lake and Tibbetts Brook, decreasing erosion and the decline of water quality in the Harlem River watershed. In addition, these projects will increase public awareness of wetland importance and the need to restore Van Cortlandt Park wetlands. The removal of invasive plants and stormwater pollutants will also benefit people with asthma and other breathing concerns.

Our Wetland Stewardship for a Healthier Bronx projects are related to the Clean Water Act, section 104(b)(3). Our project addresses several of the areas mentioned in the Clean Water Act, Section 104(b)(3) such research, training and demonstration projects relating to the causes, effects, prevention and reduction of water pollution. Our project will include a research component to study the current status of the health of the wetlands through water testing, training of young people on how to conduct wetland restoration projects and the implementation of demonstration projects to determine which methods of wetland restoration are the most effective in Van Cortlandt Park. The ultimate goal of this project to determine the causes of and effects of an unhealthy wetland while working to prevent and reduce the pollution of our wetlands and increasing the amount of water they can hold and filter.

ii) How the Organization and Its Partner(s) Will Work Together During the Year to Address the Local Issue(s)

FVCP will partner with several organizations to develop and implement the Wetland Stewardship for a Healthier Bronx project. Partnerships will include New York City Department of Parks and Recreation (NYC Parks), GrowNYC, Bronx Council for Environmental Quality (BCEQ), Manhattan College, U.S. Geological Survey (USGS) and NYC's Office of Emergency Management's Community Emergency Response Team (CERT).

The Friends of Van Cortlandt Park have a very close working relationship with NYC Parks meeting on a regular basis with the Park Administrator and developing projects with the Natural

Areas Manager. Throughout this project, we will keep NYC Parks informed about all of the projects taking place and will receive any necessary approval before implementing projects. As the land owner, with no staff currently dedicated to the wetlands, NYC Parks has a vested interest in seeing this project implemented. NYC Parks recently completed a Master Plan for Van Cortlandt Park which highlighted several areas of concern within the wetlands and stressed the need for increased management of these sensitive areas.

FVCP will partner with GrowNYC to develop the curriculum and GrowNYC will be present for all activities with Dewitt Clinton High School. Founded in 1970, GrowNYC is a 501(c)3 nonprofit organization whose goal is to make New York City the most sustainable and livable city in the world, neighborhood by neighborhood and block by block. GrowNYC's four major program components, Greenmarket, Open Space Greening, Recycling, and Environmental Education, each consist of several strategies and initiatives that operate in every area of New York City. GrowNYC has been implementing environmental education programs at Dewitt Clinton High School for several years and is extremely interested in expanding these programs to include wetland restoration. The Friends of Van Cortlandt Park has partnered with GrowNYC for the last two years to implement a Youth market near the Park and look forward to expanding this partnership to include this new project.

FVCP will partner with BCEQ, USGS and Manhattan College to implement the research component of this project. BCEQ is a non-profit 501(c)3 membership organization located in NYC's only mainland borough — The Bronx. They are a diverse collection of individuals all seeking to leave our great grandchildren better air, land, and water quality than we have at present. FVCP and BCEQ have partnered on several projects over the last twenty years, including community outreach for the NYS Brownfield Opportunity Area Project along the Harlem River. The USGS is a scientific organization that provides impartial information on the health of our ecosystems and environment, the natural hazards that threaten us, the natural resources we rely on, the impacts of climate and land-use change, and the core science systems that help us provide timely, relevant, and useable information. Manhattan College is located only a few blocks from Van Cortlandt Park and has a strong Environmental Engineering program. Although this is the first time FVCP will be partnering with the USGS and Manhattan College, BCEQ has partnered with both in the past. We are currently working with these organizations to secure funding to implement a Tibbett's Wetland Pollution Study and to create a Stormwater Pollution Prevention Plan (SWPPP) for Tibbett's Wetland areas within Van Cortlandt Park. Even if this funding is not obtained, we will still work with these groups to conduct a general assessment of the current health of the wetlands, and the potentiality of green infrastructure within the park to increase stormwater infiltration and habitat restoration to help reduce runoff and habitat destruction in the park's hilly terrain which extends from 55 to 200 feet above sea level.

FVCP will partner with CERT members from our local district to help recruit volunteers for the Wetland Restoration Crew and to educate the public about the connection between wetlands and community climate resiliency. CERT members undergo an intensive 10-week training program that educates members about emergencies and disasters and provides basic response skills needed for fire safety, light search and rescue, disaster medical operations, and traffic control. After graduating from the 10-week program, CERT members support their communities

by assisting with emergency education and response. Emergency services personnel are the best equipped to respond to disasters. NYC CERT volunteers are trained to support the efforts of New York City's first responders. Currently, CERT members help to clean storm drains in the district before large storm events to reduce the likelihood of CSO's occurring therefore they have a vested interest in helping to reduce the amount of water entering the sewers in the first place. This will be the first time we are partnering with CERT on a project of this size.

Prior to the implementation of the project, we will work with each partner to develop Partnership Agreements that clearly explain what FVCP's role in the project and what that partners role in the project will be. Throughout the course of the project, FVCP will provide monthly updates to all of its partners to let them know what is currently taking place and to help them understand the big picture of the project and not just the aspects they are involved in. FVCP greatly values the various relationships and partnerships that we have for all of our programs. As a small nonprofit, we understand that without support from other groups we would not be able to accomplish what we do. Therefore, we will work to ensure that all of our partners are as involved as they can be and that they feel their efforts are worthwhile and want to continue working with us in the future.

V. Organization Capacity and Programmatic Capability

The Friends of Van Cortlandt Park uses QuickBooks and has an accountant who comes in monthly to conduct bank reconciliations. In addition, we use ADP for all of our payroll services. The organization is committed to responsible financial management which we adhere to by following our Financials Policies and Procedures Handbook.

The Friends of Van Cortlandt Park have been in existence since 1992 and over the years have executed many successful projects of a similar scope and size as this project. To date, the largest grant that we have received was \$68,000 from the Booth Ferris Foundation in 2011 to hire the New York-New Jersey Trails Conference to install 52 stone steps and 2 stone water diversions along with completing other projects with volunteers on the John Muir Trail. Our Executive Director, Christina Taylor, has vast experience managing funds and projects of various sizes and has several practices in place to ensure proper usage and reporting. She has been with the organization for 14 years and has served as the Executive Director since 2006. She is very detailed oriented, keeps organized files and meets with staff throughout the course of a project to enable her to complete all reports correctly and in a timely fashion.

The Friends of Van Cortlandt Park has not received an EPA grant within the last five years. However, we have received funding and meet all reporting requirements from the NYS Department of Agriculture & Markets (T011451, Meg McCabe). We are in the process of wrapping up and have met all requirements to date from current funding sources: NYC Department of Youth and Community Development (#13015M, Christina Vadala) and NYS Department of Environmental Conservation (T305020, Lisa Kravick).

VI. Qualifications of the Project Manager

The Friends of Van Cortlandt Park's Trails Project Manager will be the Project Manager for the Wetland Stewardship for a Healthier Bronx. Mr. Butler's knowledge of wetland restoration in

particular stemmed in his courses in college where he focused his studies on wetlands ecology and management as well as the flora and fauna found in these sites and culminating in a senior year at the University of Vermont project on the growth and management of the agricultural wetlands of rice paddies.

Mr. Butler's current work with the Friends of Van Cortlandt Park centers on maintaining the forest and trails of Van Cortlandt Park through devising volunteer projects for community volunteers and local school groups. He leads educational lessons in the Park for classes that come to the Bronx from all over New York City and Westchester County. Mr. Butler leads FVCP's Teen Trails Internship, which is a seven week long summer internship for local teenagers to learn about the environmental impacts relating to the Park while doing hands-on forest and trail maintenance. Once a month, John works alongside members of the community who volunteer their time as part of the Van Cortlandt Trails Crew. This group has done such work as rebuild eroded trail, install French drains along the side of trails, and remove invasive plant species to allow for native growth to return.

As an employee of FVCP, Mr. Butler not only interacts with students and NYC Parks employees but also with a myriad of community members and interest groups in the area surrounding the Park. The Friends have benefited from his ability to strengthen existing partnerships within the community as well as seek out and nurture new partnerships with local schools, nature groups, community members and community organizations.

His passion for wetlands has led him to volunteer with the Long Island City Boathouse through the Billion Oyster Project and he has utilized his knowledge here in Van Cortlandt Park to begin a wetland cleanup and restoration plan. Working with a crew from the Student Conservation Association, Mr. Butler worked on the removal of the invasive porcelain-berry (*Ampelopsis brevipedunculata*) laying the groundwork for future wetland restoration.

VII. Past Performance in Reporting on Outputs and Outcomes

The Friends of Van Cortlandt Park have not received any grants or cooperative agreements of similar size, scope and relevance to this project over the last three years. However, we have had the following agreements in the past three years with government sources:

- Contract #T305020, Youth Operated Farmers Market Stand 2014, \$10,000, NYS Department of Environmental Conservation's Environmental Justice Community Impact Grant Program, and Contact: Lisa Kranick
- Contract #13015M, Youth Run Farm Stand Internship 2014, \$10,000, NYC Department of Youth and Community Development and Contact: Christina Vadala
- Contract #T011451, Youth Operated Farmers Market Stands 2013, \$10,000, NYS Department of Agriculture & Markets' FreshConnect Farmers Market Grant, Contact: Meg McCabe

The Friends of Van Cortlandt Park last received a grant from the EPA's Environmental Education grant program, agreement #NE 972405-08 in September of 2008 for \$15,000 for our Environmental Internship program.

Christina Taylor, Executive Director, was the administrator for these grants and will be the administrator for this grant shall we receive it. Ms. Taylor keeps detailed notes for both narrative and financial reports throughout the projects. FVCP staff that is directly involved with the project meet with Ms. Taylor on a regular basis to make sure all outputs and outcomes are being met in a timely fashion. All reports were correctly completed and submitted in a timely fashion. We are still wrapping up the two current year contract but have met all requirements to date.

VIII. Quality Assurance Project Plan (QAPP) Information

Our project will not need to submit a QAPP plan.